Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of the Claims:

CLAIMS

1.   (Previously Presented) A method comprising:

selecting a set of one or more original ordered sequences the set of ordered sequences having at least one desired property;

creating a set of extended sequences, each based on an original ordered sequence of the set of ordered sequences by beginning with an element of the original ordered sequence of the set of ordered sequences, cyclically appending elements of the original ordered sequence of the set of ordered sequences in order to obtain a desired extended sequence length comprising at least one subsequence, and

modifying each extended sequence using a corresponding modifying sequence,

such that a training sequence can be generated from any one of the modified extended sequences by beginning with a first element of a subsequence of the any one modified extended sequence and taking each element of the subsequence in order to obtain the training sequence, the modifying sequence being selected so that the obtained training sequence when modulated by a selected modulation format has the at least one desired property of the corresponding original ordered sequence.

2.   (Cancelled).

3.   (Previously Presented) The method of claim 1, wherein the one desired property comprises a function of the autocorrelation of any original ordered sequence of the set of original ordered sequences being below a threshold value.

4.   (Previously Presented) The method of claim 1, wherein the original ordered sequences have a cross-correlation property further comprising generating further training sequences from the any one modified extended sequence by beginning with other elements of the any one modified extended sequence and wherein the modifying sequence is selected so that the training sequence and the further training sequences when modulated by the selected modulation format have the cross-correlation property.

5.   (Original) The method of claim 1, wherein the one desired property comprises a function of the cross-correlation of any original sequence in the set of original sequences with any other original sequence in the set of original training sequences being below a threshold value.

6.   (Previously Presented) The method of claim 1, wherein the original sequence comprises a sequence of complex numbers corresponding to phase shifts employed by the modulation format used to transmit the training sequence.

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7.   (Previously Presented) The method of claim 1, wherein the modifying sequence comprises a sequence of complex numbers, and forming the modified extended sequence comprises multiplying each element of the extended sequence by a corresponding element of the modifying sequence.

8.   (Original) The method of claim 7, wherein the modulation format is a π/M – MPSK modulation format.

9.   **(Currently Amended)** The method of claim 8, wherein the modifying sequence comprises pairs of equal complex numbers, such that each complex number pair is equal to the previous complex number pair multiplied by ~~exp(j2π/M)~~ **exp(2π/M)**.

10.   (Original) The method of claim 1, wherein the modulation format is a $\pi/2 - 2PSK$ modulation format.

11.   (Original) The method of claim 10, wherein the original sequence comprises a sequence of binary symbols.

12.   (Original) The method of claim 11, wherein the modifying sequence performs a binary complement operation on every other pair of elements of the extended sequence.

13.   (Original) The method of claim 1, wherein selecting a set of original ordered sequences comprises selecting a family of Gold sequences.

14. – 17.   (Cancelled)

18.   (Previously Presented) The method of claim 1, wherein the at least one subsequence has a length at least as great as the original sequence.

19.   (Previously Presented) An apparatus comprising:

        a data store having stored therein a plurality of ordered sequences for use in generating a training sequence; and

        a processor to generate the training sequence by taking and modifying a number of elements of one of the plurality of ordered sequences, wherein a function of an autocorrelation of the training sequence is below a threshold value.

20.   (Previously Presented) The apparatus of claim 19, further comprising the

processor to generate another training sequence by taking a number of elements of

another of the plurality of ordered sequences, wherein the cross correlation of the another

training sequence with the training sequence is below a threshold value.

21.   (Previously Presented) The apparatus of claim 19, wherein the length of the

plurality of ordered sequences is the length of the training sequence plus the index of the

element of one of the plurality of training sequences which is the initial element of the

training sequence.

22.   (**Currently Amended**) A computer readable medium ~~having~~ **encoded with**

computer executable instructions which, when executed by a processing system, cause

the system to:

        select a set of one or more original ordered sequences the set of ordered sequences

having at least one desired property;

        modify each original ordered sequence of the set of ordered sequences using a

corresponding modifying sequence to obtain a set of training sequences, such that the

obtained training sequences when modulated by a selected modulation format have the at

least one desired property of the corresponding original ordered sequence.

23.   (Previously Presented) The computer readable medium of claim 22, wherein the one desired property comprises a function of the autocorrelation of any original ordered sequence of the set of original ordered sequences being below a threshold value.

24.   (Previously Presented) The computer readable medium of claim 22, wherein the one desired property comprises a function of the cross-correlation of any two of the original ordered sequences being below a threshold value.

25.   (Previously Presented) The computer readable medium of claim 22, wherein the modifying sequence comprises a sequence of complex numbers, and forming the training sequence comprises multiplying each element of the original sequence by a corresponding element of the modifying sequence.